

Riverside Neighborhood Tree Inventory

An Inventory of the Urban Forest

For

City of Evans, Colorado

By

University of Colorado, Colorado Center for Community Development
Colorado Department of Local Affairs
University Technical Assistance Program

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EXECUTIVE SUMMARY

An inventory of Evan's urban forest was completed with the intent to gain a better understanding of the overall type and age of the trees as well as available planting sites. The inventory covered the Riverside Neighborhood street trees, Public Library site and City Park.

The study found that of the large street trees, most are Siberian elms, and in fact, it became apparent that there are a disproportionate number of elms overall. A greater diversity of trees is desirable and should be considered in all new plantings. A list of recommended species can be found on pages 12-14 .

As for sites that are maintained by the City, City Park needs a few trees removed and some minor pruning. On the other hand, the Public Library site has many young trees that weren't irrigated early this summer and are showing signs of severe stress. To attempt to save these investments, the following actions are recommended for the 2015 season.

1. Remove all stakes and straps.
2. Ensure proper irrigation at all times.
3. Water young trees once each month during the winter.

For a complete list of priorities for 2015 and 2016, see page 11.



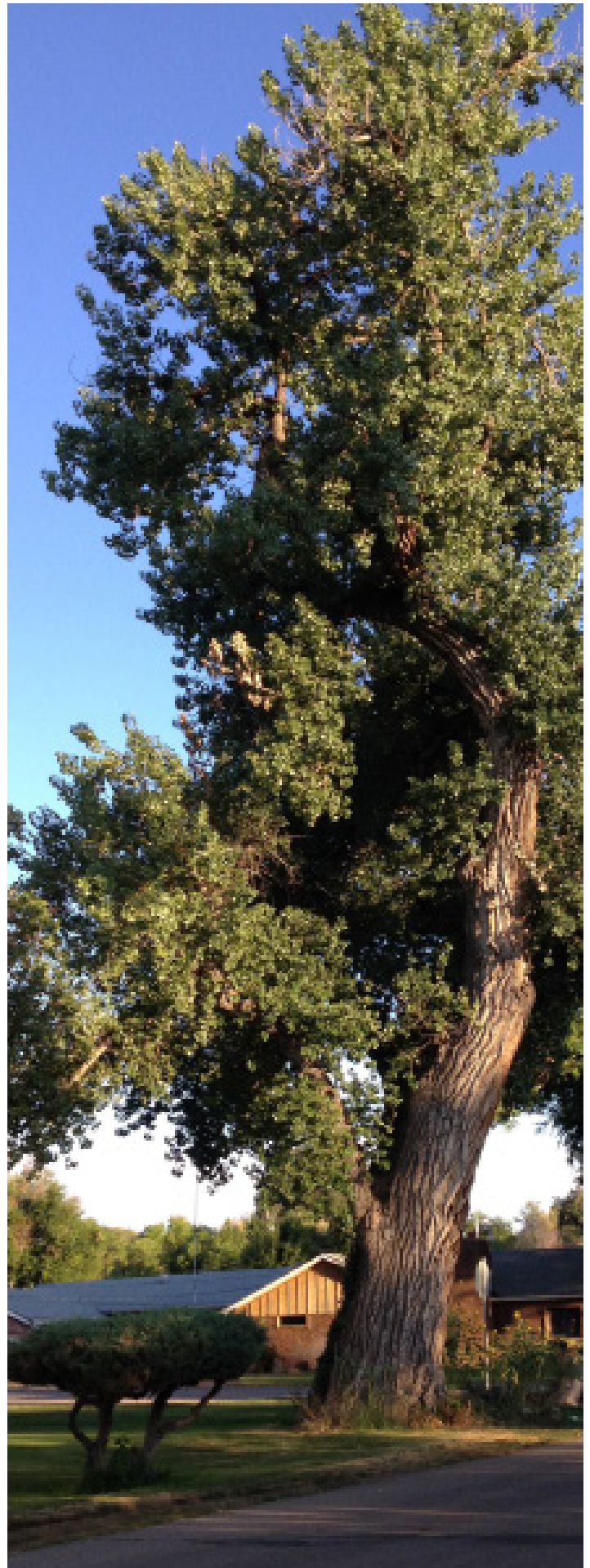
INTRODUCTION

Incorporated in 1869, Evans, Colorado was the County Seat of Weld County for many years. From a population of around 400 in a true wild west town, Evans has grown to 18,537 residents living in an urban area with a rural feel. Today Evans is a community where residents have a wide choice of housing, great schools, all the shopping and amenities of a large town, and a great quality of life. Evans is located just south of Greeley and is currently a thriving community.

GOALS OF THE STUDY

Evans requested assistance in preparing an inventory of the street trees in the Riverside Neighborhood. The work was coordinated through a grant from the Colorado Department of Local Affairs (DOLA) and the University of Colorado, Denver (UCD) Campus. The DOLA and UCD outreach program (CCCD) provides design and planning assistance to rural communities and is jointly funded by DOLA, UCD and the community. Projects under this program are limited to conceptual design for parks, streetscapes, community facilities and other special programs. The program also provides a range of technical assistance for community surveys and special studies. This inventory was one of those special studies prepared for the City.

The City of Evans recently completed a master plan for the Riverside Neighborhood, which includes adding curb and gutter to several streets. They requested help identifying trees within approximately 15 feet of the street that may be “overly mature” or be affected by implementation of the plan. This concern grew into the desire for an overall picture of what species were growing in the neighborhood, available planting sites and what species may be under-utilized.



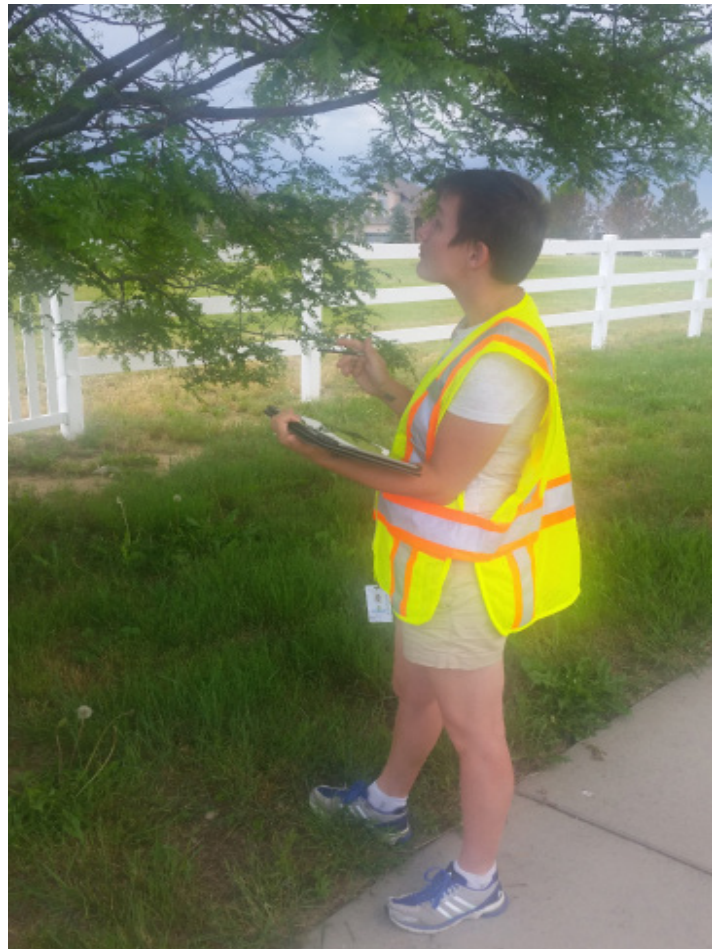
METHOD

Inventory of the trees in the neighborhood was a documentation exercise. This was accomplished by walking the streets, identifying the trees within 15-20 feet of the street, documenting them on a GIS database, and adding additional information. For this work, an intern from Colorado State University Horticulture School was hired to conduct the inventory and map the vegetation within a regional database known as CO-TreeView (CoTreeView.com). Several Front Range communities have used this software and database to inventory their trees and this study found it easy to use.

With tablet in hand, each tree was located on aerial photography and logged in using the CO-TreeView GIS program along with details such as the tree's size and species. These tree locations and the associated information for each tree can be found on the CoTreeView.com website by logging in as a guest, clicking Evans and zooming in to the area you desire to look up.

Other than species and size, a number of health descriptors were added to the inventory as well as marking available planting sites. Together, this data can aid the City in determining future maintenance needs and possible assistance to its residents.

The CO-TreeView website is a free, helpful, and user friendly tool, but has a few limitations. For example, there are only four descriptors for condition and a limited number of species from which to choose. This means that a few common species in the neighborhood were lost in the categories of "Other Broadleaf" and "Other Conifer." Actual species are listed in the NOTES field of the individual tree and clarifications on health are made in the next section.



CSU Horticulture School intern conducting inventory.



GENERAL FINDINGS

Initially the concern was for the older, more mature trees in the neighborhood, however the City also expressed a desire to glean as much information as possible about the urban forest. The study concentrated on the state of the Public Library and City Park sites, the overall makeup of the urban forest, the general age and health of the trees and what species may be under-planted. Available planting sites were also noted. 1,535 trees were inventoried in the neighborhood with the following mix of species, health and Diameter at Breast Height (DBH.) Although recommendations are made separately, these graphs include the Public Library and City Park trees along with the rest of the neighborhood.

Approximately 67% of the inventoried trees fall into the following 7 categories:

7.2 % Apple (Includes Crabapple species)

9.6% Ash* (Green, White and Other)

21.9% Elm (Mostly Siberian Elm*)

6.8% Honeylocust

9.3% Maple (Mostly Silver Maple* and Boxelder*)

6.0% Other Broadleaf (Mostly Mulberry* and Willow)

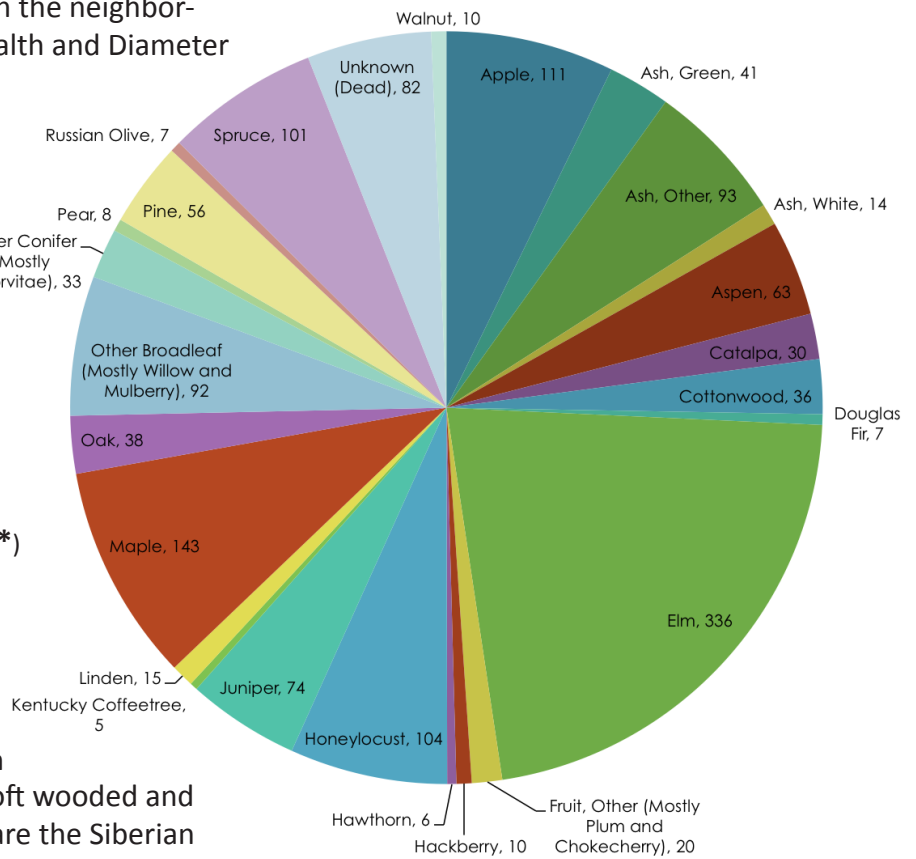
6.6% Spruce

Of these prevalent species, many are considered undesirable trees (Marked with an asterisk) because they are invasive or soft wooded and prone to breakage. Of particular concern are the Siberian Elms that make up nearly a quarter of the urban forest. As they begin to fail, it will be important to introduce new species to the area to create more diversity and a stronger, healthier urban forest with greater longevity.

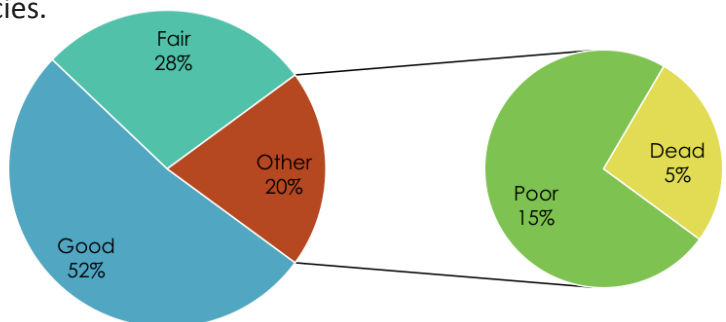
OVERALL HEALTH

The majority of the trees in this area are healthy or "Fair" (could use some minor pruning.) The trees that are in "Poor" condition and need major pruning are mostly elms, which is primarily due to age and the nature of the species. Although nearly 10% of the trees inventoried are ash, there was no observable evidence of the Emerald Ash Borer. The ash trees noted in poor health were primarily suffering from infestations of the Lilac Ash Borer or the Ash Bark Beetle which can also be devastating pests. So far, the Emerald Ash Borer has not been found outside of Boulder, but we should remain vigilant.

Tree Species



Health



HEALTH NOTES

Because there are only four health qualifiers in the CO-TreeView website, refer to the following definitions for clarification.



GOOD CONDITION: Tree needs no immediate attention and is not likely to be a hazard.



FAIR: Tree needs minor pruning to eliminate small, dead branches, but nothing hazardously large.



POOR: Tree needs major pruning. This is either because there are large, hazardous, dead branches or many small, dead branches.

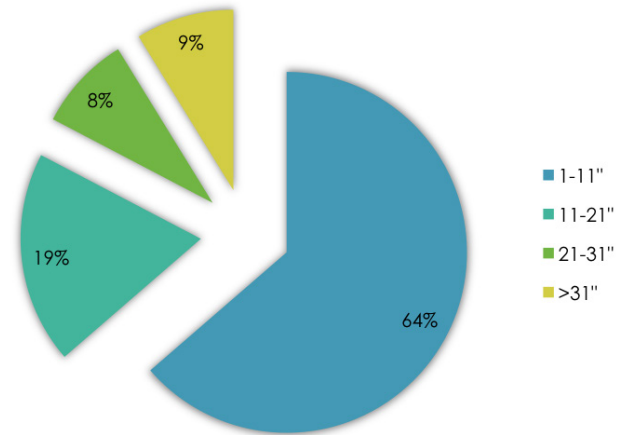


DEAD: Tree is dead or nearly dead.

OVERALL SIZE

Although they make less of a visual impact, the majority of the trees in this area are under 11" DBH. Of the trees between 11 and 21" there is a fair mix of species. However, the trees larger than 21" are mostly elms, maples, cottonwoods and "Other Broadleaf." Those larger than 31" are almost all elms. These statistics can be examined in more detail on the COTreeView.com dashboard along with many other useful facts.

Diameter at Breast Height



NAVIGATING COTREEVIEW.COM

To log in to CO-TreeView, use Google Chrome as your web browser and enter the username and password provided. Once logged in, click "Go to the map!" Upon logging in to the website, a number of tools are readily available including the ability to filter by tree species, size, and condition.

THE DASHBOARD

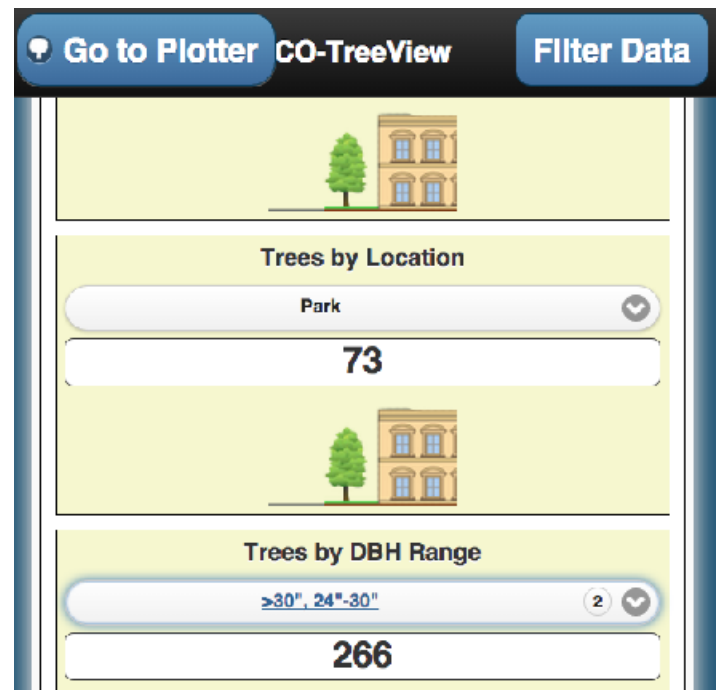
Once inside the map, there are three blue buttons at the top left hand side of the page. The center one that looks like a bar graph will take you to the Dashboard, an interactive page where you can search the inventory and review statistics. Many useful pieces of data are available in the dashboard that include the following:

Main Counts

- Total Trees Inventoried
- Vacant Planting Sites
- Number of Removals

Number Queries

- Find out how many trees are in the following categories:
- Number of Ash Trees (Select which species you would like a count of)
- Trees by Location (How many are on private land, in parks, etc)
- Trees by DBH range (Select one or more DBH range)
- Trees by Species



Statistical Graphs

Most Common Tree Species

Trees by location

Trees by DBH

Trees by Species

Count of Ash Trees (By species)

Ash by DBH

Most Common Species by DBH Range

Within the graphs themselves, simply hover over any piece of the pie and a small window will appear, showing how many individual trees are in that category.

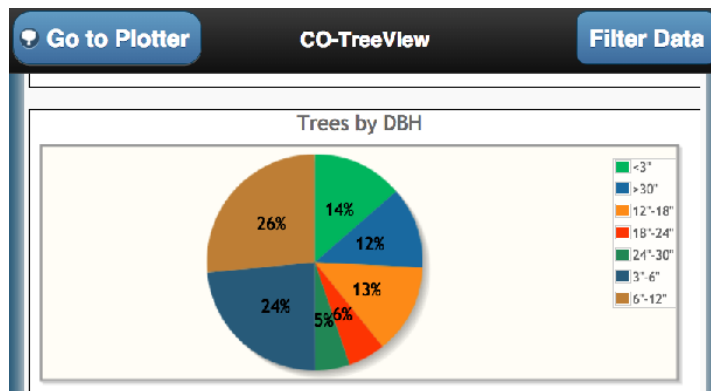
UPDATING THE MAP

To update information in CO-TreeView as the forest changes, go to the map, visually locate the tree you would like to edit by using the “Zoom In” and “Zoom Out” tools along the left-hand side of the map and click on the desired tree. To change the health status of a tree, verify the current information and select the new health qualifier. To edit the size of a tree, simply click in the box below “DBH” and type the new size. To delete a tree that has been removed, verify the information describes the correct individual and click delete at the top right corner of the screen.

MORE INFORMATION

To find out more information about the website, go to one of the “Learn More” links on the “Getting Started” page when first logging in.

CO-TreeView will soon migrate to Version 2 of Plan-It Geo’s Tree Plotter software. There are a lot of new and improved features with this version. For more information on some of the great new benefits, visit Plan-it Geo’s website at <http://www.planitgeo.com/#!new-tree-plotter/c12n>. A short slideshow and 1-3 minute videos on several Version 2 tools will also be available soon on this page.



The screenshot shows the "Tree" details interface for a "Kentucky Coffeetree". It includes fields for DBH and Condition.

Tree

Kentucky Coffeetree

DBH: 12

Condition:

- ☐ N/A
- ☒ Good
- ☐ Fair
- ☐ Poor
- ☐ Dead

PUBLIC LIBRARY SITE RECOMMENDATIONS

REMOVE STAKES AND STRAPS

Most of the trees are already beginning to outgrow their straps, so remove them immediately. Young trees only need to be staked for one year. After one year, it is important to remove the stakes and the straps attaching them to the tree. If left too long, the straps can girdle the tree and cause restricted growth, canopy decline, and eventually death.

IRRIGATION AND WINTER WATER

Ensure that all young trees are being irrigated properly. Water once every month in the winter. Most of the trees on this site are showing signs of stress from drought but may survive the winter with proper care. Watering a few times during the dry Colorado winters is very crucial to the survival of young trees and in this case, may make the difference between survival and death.

SPRING 2016 EVALUATION

After trees have started to bud out in the spring, evaluate to determine what survived the winter. Remove and replace dead trees.

CREATE DIVERSITY

When replacing trees on this site, consider adding new species. Broad plant diversity creates a stronger, healthier urban forest while helping to prevent the spread of disease and insect pests. When too many of the same species are planted in close proximity, one infected plant can soon become an epidemic. By creating a diverse urban forest, pests and diseases cause much less damage overall. Following this section, there are a few lists of recommended species to plant when replacing existing trees or planting new ones. Use species from list #1 for most areas on this property. Use species from list #2 for anything in the low-lying drainage areas that hold a lot of moisture.

FERTILIZE AMUR MAPLES

Most Amur maples in Colorado have trouble absorbing iron in our alkaline soil. Watch these trees closely for signs of chlorosis to determine if they will need a regular fertilization regimen.



Crabapples showing extreme stress, need stakes and straps removed.



Chlorosis: Lack of chlorophyll causing a yellow leaf color. Discoloration can be caused by nutrient deficiencies, most commonly iron in this area.

CITY PARK

RECOMMENDATIONS

OVERALL OBSERVATIONS

The general health of the park trees is very good. Of the 71 trees on site, there are only 2 dead and 3 in poor condition. There is also a healthy amount of diversity with almost 20 different species represented. The following recommendations are made to improve this already wonderful public park.

PRUNE OUT DEAD BRANCHES

Many of the trees in the park need some minor pruning. Only a few need major pruning or removal. Trim out dead branches every year to avoid hazards and mess.

REMOVE DEAD AND FAILING TREES

The only trees that are truly hazardous in the park are two large Siberian elms on the east side. One is listed in poor condition and the other is listed as dead. When replacing, avoid adding more oak trees as there are already 16 on site. Choose others from the list provided.

CREATE DIVERSITY

When replacing trees on this site, consider adding new species. The diversity is already quite good, but continuing this trend will improve the overall health of the park. Broad plant diversity creates a stronger, healthier urban forest while helping to prevent the spread of disease and insect pests. When too many of the same species are planted in close proximity, one infected plant can soon become an epidemic. By creating a diverse urban forest, pests and diseases cause much less damage overall. Following this section, there are a few lists of recommended species to plant when replacing existing trees or planting new ones. Use species from list #1 for all areas in this park.



PRIORITIES FOR 2015

1. Remove all stakes and straps. Young trees on the Public Library site are still staked. Stakes only need to stay in place for one year. After one year, make sure to remove the stakes as well as the straps connecting them to the tree. If the straps remain, they can choke the tree as its trunk outgrows the straps.

2. Irrigation and winter water. Ensure that all young trees on the Public Library site are being irrigated properly. Water once every month in the winter. This practice should continue for the first 3-4 years after planting a new tree, depending on the species.

3. Pruning and dead tree removals. Prune dead branches from trees in City Park to prevent hazards. Remove and replace dead trees.

PRIORITIES FOR 2016

1. Evaluate Public Library trees. After trees have started to bud out in the spring, evaluate to determine what survived the winter. Remove and replace dead trees.

2. Irrigation and winter water. Ensure all young trees on the Public Library site and City Park site are being irrigated properly beginning before it starts to get hot. This will help avoid future stress and loss of trees. Water once every month in the winter.

3. Add diversity with new plantings. Utilize the lists of recommended species to choose new trees for these areas.



AVAILABLE PLANTING SITES

In the Riverside Neighborhood, there are almost 300 available planting sites. Sites were determined to be available if they were large enough to fit a fully mature shade tree while not interfering with foundations or streets.

WHY WE PLANT TREES

The urban forest of any community provides many benefits to its residents. Aside from the obvious aesthetic benefits, trees within our urban forest improve our air by absorbing pollutants and releasing oxygen. They improve property values and even save energy by providing shade to our homes. Trees protect our water and improve economic sustainability, but mostly, they make our community feel like home. The trees our parents and grandparents planted became our childhood jungle gyms. The trees we plant will become our children's fortresses and our grandchildren's treehouse foundations. We plant trees not only because they add value to our property but because they add value to our lives.

RECOMMENDED SPECIES

The following lists contain species that generally do well in this area of Colorado and are not commonly planted in the Riverside Neighborhood. The lists are separated into different types of planting sites depending on the moisture level. Keep in mind that any tree, no matter the hardiness at maturity, will need time to become established. It can take anywhere between 1 and 5 years for a tree to become established, depending on its size, and will need regular water even in the winter.



Littleleaf Linden

LIST #1

Sites that are irrigated regularly but not wet.

LARGE TREES

American Linden
Bur Oak
Catalpa
Chinquapin Oak
Common Horse Chestnut
English Oak
Green Mountain Sugar Maple
Hackberry
Kentucky Coffeetree
Lanceleaf or Narrowleaf Cottonwood (Cottonless)
Littleleaf Linden
Norway Maple
Ohio Buckeye
Rock Elm
State Street Maple

MEDIUM TREES

Amur Corktree
Bigtooth Maple
Chanticleer or Autumn Blaze Pear
European Mountain Ash
Japanese Pagoda Tree
Mayday Tree

SMALL TREES

Canada Red Chokecherry
Downy Hawthorn
Gambel Oak
Hedge maple
Hoptree
Japanese Tree Lilac
Native Mountain Ash
Newport Plum
Russian Hawthorn
Serviceberry
Tatarian Maple
Thornless Cockspur Hawthorn
Toba Hawthorn
Ussurian Pear
Washington Hawthorn

EVERGREENS

Bosnian pine
Chinese Juniper
Eastern Redcedar
Limber pine
Mugo Pine (Various cultivars offer many sizes)
Norway Spruce
Rocky Mountain Juniper (Various cultivars offer different growth habits)
Southwestern White Pine



Chanticleer Pear

LIST #2

Wet drainage areas or areas prone to flooding.

LARGE TREES

Golden Weeping Willow

Lanceleaf or Narrowleaf Cottonwood (Cottonless)

Swamp White Oak

MEDIUM TREES

Black Alder

Bog Birch

European White Birch

Paper Birch

Water Birch

SMALL TREES

Pussy Willow

Rocky Mountain Maple

Thinleaf Alder

EVERGREENS

European Larch



Swamp White Oak



Golden Weeping Willow